Respiratory Distress Syndrome, Acute (Adult)

Summary of Methods and Data for Estimate of Costs of Illness

1. Estimated Total Economic Cost	$ 4.1 billion
Estimated Direct Cost	$ 3.2 billion
Estimated Indirect Cost	$ 0.9 billion
Reference Year	1999
IC Providing the Estimate	NHLBI
Direct Costs Include: Other related nonhealth costs	No
Indirect Costs Include:	
Mortality costs	Yes
Morbidity costs: Lost workdays of the patient	No
Morbidity costs: Reduced productivity of the patient	No
Lost earnings of unpaid care givers	No
Other related nonhealth costs	No
Interest Rate Used to Discount Out-Year Costs	6 %

2. Category code(s) from the International Classification of Diseases, 9th Revision, Clinical Modification,(ICD-9-CM) for all diseases whose costs are included in this estimate: 518.5, 518.8.
3. Estimate Includes Costs:

Of related conditions beyond primary, strictly coded ICD-9-CM category	No
Attributable to the subject disease as a secondary diagnosis	No
Of conditions for which the subject disease is an underlying cause	No

4. Population Base for Cost Estimate (Total U.S. pop or other)	Total U.S. pop.
5. Annual (prevalence model) or Lifetime (incidence model) Cost:	Annual
6. Perspective of Cost Estimate (Total society, Federal budget, or Other)	Total Society
7. Approach to Estimation of Indirect Costs	Human Capital

8. Source of Cost Estimate:

Unpublished. Contact Thomas Thom, NHLBI, 301-435-0710..

9. Other Indicators of Burden of Disease:

It is estimated by the NHLBI that 150,000 previously healthy adults develop ARDS every year. The case-fatality rate is 50 percent. ARDS can follow trauma and surgery. The national morbidity and mortality burden of ARDS is difficult to estimate because diagnostic accuracy of hospital and mortality statistics on ARDS is limited.

10. Commentary

Cost estimates for ARDS are based on national hospital discharge, physician office visit, and mortality data classified by the International Classification of Diseases as: Pulmonary insufficiency following trauma and surgery (518.5) and Other diseases of lung(518.8). Both codes include ARDS and other diseases as inclusion terms, suggesting the cost estimates may be

overstated. However, a larger part of hospitalzations and mortality from ARDS is secondary to other diseases.

Direct costs by type of cost for total respiratory diseases in 1995 were estimated by Tom Hodgson (National Center for Health Statistics) in a report to be published. He used a variety of survey data from NCHS and the Health Care Financing Administration, and elsewhere. ARDS costs for 1995 are estimated by applying to Hodgson's total respiratory costs (mostly hospital costs) the proportion that ARDS is of total respiratory diagnoses for hospital days reported in the latest NCHS survey, 1997. The estimate of the cost of non hospital-related physician services and drugs are close to zero, but are included. Costs for 1995 were inflated to 1999 by a 7% inflation factor from HCFA hospital costs in 1995 ($347.2 billion) and 1997 ($371.1 billion). Only the primary diagnosis of ARDS reported in the surveys was considered. Allocating costs according to the primary diagnosis eliminated overlap with other diseases. Costs associated with ARDS as a comorbid condition to some other primary diagnosis were not included. Costs incurred by family or other personal caregivers for ARDS patients cannot be estimated and were not included. The national health expenditures that cannot be allocated to diseases (e.g. construction and research) were not included in the ARDS direct costs.

The indirect morbidity cost of ARDS cannot be estimated. The indirect mortality cost of ARDS in 1997 represents lost productivity based on lost earnings attributed to premature deaths from ARDS in that year. It was estimated by applying the numbers of ARDS deaths in 1997, by age and sex, reported from national vital statistics, to the age-sex estimates of the present value of lifetime earnings discounted at six percent. These lifetime values were estimated for 1997 by Wendy Max and Dr. Dorothy Rice (University of California, San Francisco). They are not published. They were obtained by personal communication. Other deaths, where ARDS was a contributing cause, were not included. The accuracy of estimates of the present value of lifetime earnings has not been assessed by anyone at NHLBI; estimates were taken at face value.